ADAPTING REPRODUCTION KNOWLEDGE AND PHOTOMECHANICAL TECHNIQUES TO SERIGRAPHY FOR NON-COMMERCIAL PURPOSES

PROBLEM IN LIEU OF THESIS

Presented to the Graduate Council of the
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For the Degree of

MASTER OF FINE ARTS

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CHAPTER I

INTRODUCTION

During a period of approximately ten years of working as a commercial artist I have been accumulating knowledge of printing processes and photomechanical techniques used in advertising reproduction. When I began work on a graduate degree I realized that my background offered technical proficiency combined with visual attitudes developed by reproduction procedures which could be adapted to achieve a personal expression in the printmaking area. What could be more exciting than applying the interest and knowledge acquired over the years to the production of art that is not client oriented? In considering this possibility I have wondered if the years in industry have made ruts so deep that a lateral move is impossible. If I have no obligation to "sell" for a client what have I to say with my art? It seemed to be a matter of making an adjustment into a medium that would allow utilization of knowledge from my professional background in a new, forward direction paralleling my commercial work.

In considering mediums for expression I felt most strongly attracted to serigraphy. The direct positive to positive process inherent in screen printing offers immediacy

while the opportunity to combine photo images with paper stencils and/or images painted or drawn directly on the screen provides flexibility. The inks used for printing may be glossy or matte, opaque, semi-transparent or transparent, adding yet another dimension of flexibility.

Exposure to graphic methods in the advertising industry created in me an awareness that there are many reproduction techniques which possess an identity of their own. A mezzotint screen need not be just a method for converting a continuous tone original to a simulated mezzotint print, but can become a texture which creates a rich field. The halftone dot pattern can become an image in itself or can combine with an image altering the way in which it is perceived.

The possibilities offered by screen printing for varied expression and the opportunity to produce completed prints independently provides great freedom, a fantasy of all commercial artists. Could I make the necessary adjustment to achieve a personally satisfying expression? As T. S. Eliot phrased it "And I must borrow every changing shape to find expression. . . ." (1)

Statement of Problem

This problem is involved with attempting to answer two basic questions: (a) Can I, a commercial artist, expand and develop as an artist through screen printing and make valid

aesthetic statements unrelated to client and/or product? and (b) Can knowledge of reproduction methods and photo-mechanical techniques be successfully utilized in screen printing for non-commercial purposes?

Methodology

Extensive notes in the form of a journal were maintained as work on the project progressed. These notes, combined with the completed prints, were the sources of data for this paper.

The problem was evaluated through a subjective visual analysis of the completed prints as discussed in Chapter III of this paper.

Definition of Terms

For the purposes of this paper the following terms are used as defined.

Argyle camera--A small horizontal process camera capable of producing either paper or film positive prints from original copy up to a single sheet size of 14" x 17".

Continuous tone--The tonal gradation from black to white contained in a black and white photograph, or art work, which has not been screened for reproduction. (See Figure 1).

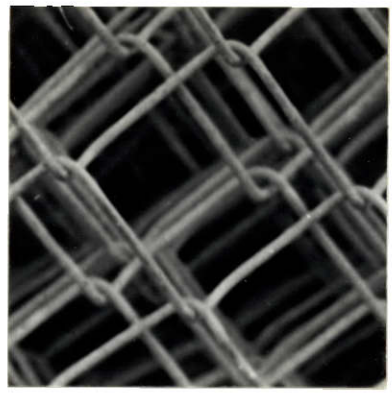

Fig. 1--Continuous Tone

Line copy--An image for reproduction composed entirely of black lines or slid black areas requiring no conversion to halftone for printing. (See Figure 2).

Fig. 2--Line Copy

Halftone screen--A screen used to translate a continuous tone image into dots of varying size which present the illusion of tonal gradation even though printed in a single ink. (See Figure 3).

Fig. 3--Halftone

Mezzotint screen--A screen used to translate a continuous tone image into one which has a characteristic mezzotint pattern as shown in Figure 4.

Fig. 4--Mezzotint

Straight-line screen--A screen used to translate a continuous tone image into straight lines of varying thickness which present the illusion of tonal gradation when printed in a single ink. (See Figure 5)

Fig. 5--Straight-line

Wavy-line screen--A screen used to translate a continuous tone image into undulating lines of varying thickness which present the illusion of tonal gradation when printed in a single ink. (See Figure 6).

Fig. 6--Wavy-line

Line-tone conversion--A method for converting a continuous tone image to black and white for reproduction without using a screen. The light to middle tones are dropped out when shot on a camera and the remaining image area reproduced as line copy. The range of tones picked up by the camera is controlled by adjusting exposure time and/or lens setting. (See Figure 7)

Fig. 7--Line-tone

Posterization--A method whereby certain tones may be selected from a continuous tone image and produced on separate film or paper positives. Selection of tones is controlled by adjusting exposure time and/or lens setting and each tone may be reproduced in different colors, screen tones, etc. (See Figure 8).

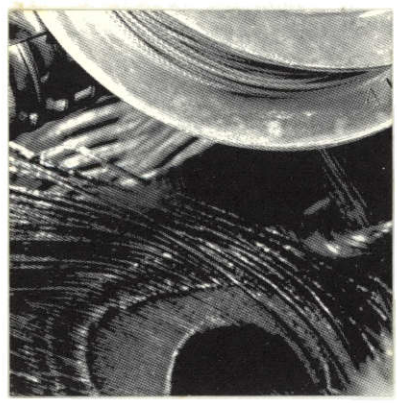

Fig. 8--Posterization

Film positive--A positive image produced on a transparent film rather than on paper as is usually the case. The image may be line copy or screened.

Graduated value--A dot pattern which varies from 90 percent through 10 percent of solid giving an effect of dark to light gradation.

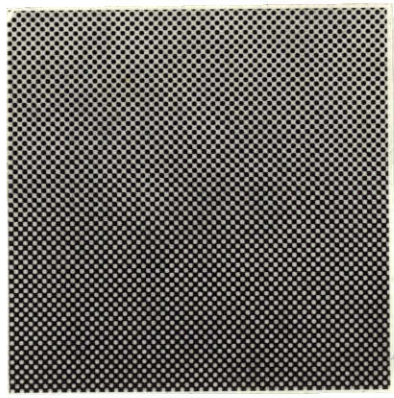

Fig. 9--Graduated value

PMT Processor--One system for producing positive to positive prints with the Argyle camera. Negative paper is exposed, then placed in direct contact with positive film or receiver paper and run through the processor where it is activated by a single chemical. In thirty seconds for paper or one minute for film the positive is peeled away from the negative resulting in a positive print.

Stripping--The process of combining several film images in proper position prior to exposing them onto a sensitized screen.

Matte finish ink--Ink having a dull finish when dry as opposed to a glossy finish.

Water-soluble blockout--A substance which may be painted directly onto a screen which, when dry, is impervious to inks

and solvents but may be removed from the screen with warm water.

Flood-coating--A technique used in screen printing to keep the fine printing areas moist, preventing clogging of the screen from dried ink. After the squegee is pulled to print the image, the remaining ink is gently squegeed back across the lifted screen. Only enough pressure is applied to coat the screen, not enough the press the ink through the mesh. The procedure is repeated after each printing.

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CHAPTER II

PRODUCING THE SERIGRAPHS

The prints were produced over a nine month period using studio and darkroom facilities available at Texas Christian University, Fort Worth, Texas. All of the film positives were made on an Argyle camera and developed using the PMT processor.

General Procedure

All printing was accomplished by utilizing three screens, one of which was 36 inches square and used as an open screen for working with paper stencils, asphaltum and glue or water-soluble blockout. The remaining screens were each 24 inches by 36 inches, the maximum size which could be exposed on the available vacuum frame exposure unit. Fine quality detail on the screens cannot be satisfactorily obtained unless the screens are exposed on a vacuum unit. A 14xx mesh dacron was stretched on the two smaller screens, 12xx was used on the large open screen. For reasons of economy a direct emulsion rather than an emulsion film was used for photo images.

Emulsion coated screens were exposed by placing them face down in the exposure unit directly onto the film positives. For some purposes ink or litho crayon drawings

on frosted acetate were used instead of, or in combination with, film positives. Anything that is opaque may be placed between the screen and the light source and exposed successfully, provided there are no edges sharp enough to damage the screen and the object can withstand twenty-five to thirty pounds of pressure.

When working with fine detail in photographic images for screen printing consideration must be given to the smallest individual dot to be printed. As a general rule anything finer than a 65 line halftone screen, which has sixty-five rows of dots per inch, is considered unsuitable for the screen printing medium. For some of the prints discussed in this paper a 65 line halftone screen was used to obtain a screened image which was then enlarged to achieve an obvious dot pattern. The oversize dot pattern does not destroy the identity of the image but does change the way in which that image is perceived, requiring the viewer to deal with the dots as images themselves and as components which create a different larger image.

Opaque oil base matte finish inks were used for printing the work discussed in this paper. A gloss finish was achieved by overprinting binder varnish on the desired areas. The degree of transparency of the inks was controlled by the addition of transparent base. Screen inks dry rapidly causing clogged areas in the mesh, particularly in images

which have fine detail. This problem was overcome by flood-coating the screen during printing after having added retarder and half tone base to the ink to slow drying time.

Control of transparency of the inks provided a great degree of flexibility. When the ink was reduced to a state of transparency equivilant to a wash there was a tendency for bleeding to occur into non-printing areas. This was controlled by adding one part binder varnish to three parts transparent ink.

Registration problems were avoided by printing first on a sheet of acetate hinged to one edge of the printing stand with tape. After printing a color, the acetate was dropped from the hinged side and allowed to dry while the screen was raised on its hinges and cleaned without changing its position. After drying, the acetate was returned to its original position, printing paper was registered under the image on the acetate and registration tabs for the paper were placed on the stand. Each color was registered in this manner.

Placing images on the screens in a random manner and utilizing the open screen for defining background areas or shapes avoided preconceiving the finished prints, allowing the work to develop during the process. Patterns and textures were also placed on the screens at random with size and shape controlled by the use of paper stencils.

Some Examples of Specific Problems and Solutions

An example of an early print is shown in Figure 10.

Fig. 10--"April 1924"

The floral background was achieved by placing real flowers on the copyboard of the Argyle camera and using a wavy-line screen during exposure. Three enlarged film positives were then stripped together creating the image overprinted in blue-grey on the pink background shape which was printed from a paper stencil. The figure images were enlarged from a 65 line halftone PMT print made from a continuous tone photograph. During the execution of the print the halftone dot pattern in the figure images became dominate to the point of distraction. An additional image of the flesh

tone areas was drawn in litho crayon on acetate and exposed on a photo screen. When printed over the dot pattern in a semi-transparent flesh tone this image subdued the dot pattern without negating it. The half tone then assumed an appropriately supportive role in the figure images.

The print shown in Figure 11 is one of a series in which shells were used as images.

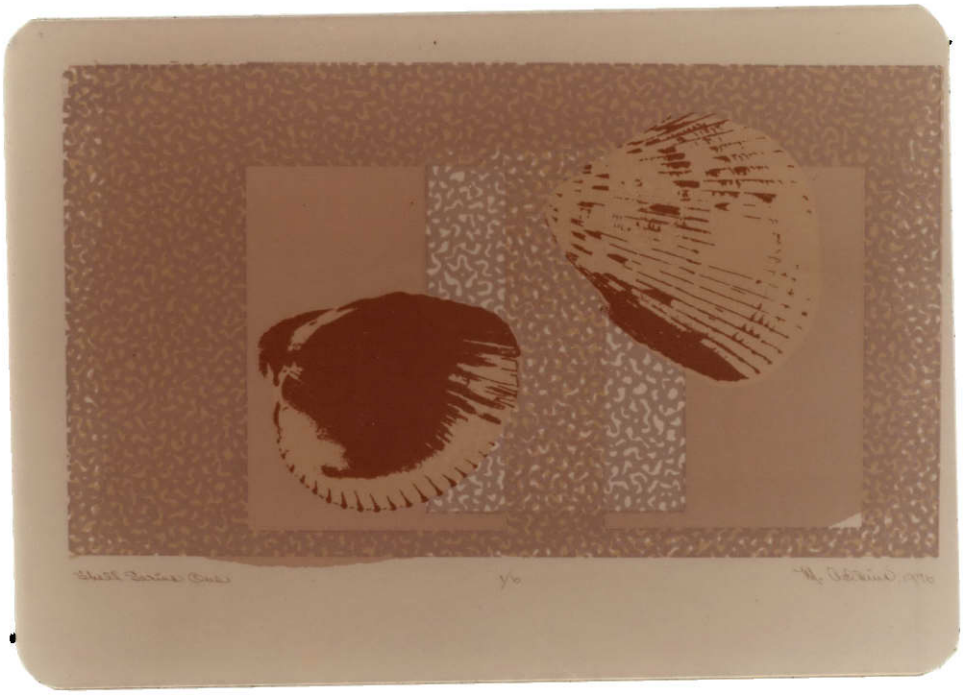


Fig. 11--"Shell Series One"

The background pattern was achieved by enlarging a mezzotint screen pattern to 600 percent of its original size. Using paper stencils to determine the size and shape of the background, the mezzotint was doubleprinted over a torn paper shape. The actual shells were shot as line-tone conversions

on the Argyle camera the resulting images were printed over shell shapes cut from paper stencils. The mezzotint pattern becomes an effective background pattern in this print.

The mezzotint pattern was again used as a background in a series of prints dealing with feathers. The feather image for the print shown in Figure 12 was produced from a small guinea hen feather shot on the Argyle camera as a full halftone and as a two-stage posterization.

Fig. 12--"Feather 3"

Enlarged film positives were made from the initial PMT prints. This print was created entirely from photomechanically achieved images, excepting the yellow background shape.

Figure 13, another example from the feather series, is based entirely on photomechanically achieved images.

Fig. 13--"Feather 4"

A small feather was shot on the Argyle camera as a full halftone and a two-stage posterization and enlarged film positives were made from the PMT prints. The background is a mezzotint pattern printed in one color, shifted and printed in a second color. The halftone feather image was printed directly over the background and both posterization stages superimposed on the halftone. The last stage posterized image was shifted and printed a second time giving the appearance of three stages.

Total Work Produced for the Project

Print I--"April 1924"

Figures--line-tone conversion and enlarged halftone combined with litho crayon drawing and paper stencils.

Background--paper stencil shape overprinted with enlarged wavy-line screen.

Surface spatter dots--asphaltum and glue double printed.

Print II--"Shell Series One"

Shells--line-tone conversion and overprinted on paper stencil shape.

Background--enlarged mezzotint double printed over paper stencil shape.

Print III--"Feather 1"

Feather--image burned directly on screen from object--printed three times.

Background--enlarged mezzotint printed three times.

Print IIIA--Color variation of "Feather I"

Print IV--"Feather 2"

Feather--image burned directly on screen from object--double printed--water-soluble blockout detail.

Background--enlarged mezzotint gloss overprint on paper stencil background shape

Print V--"Feather 3"

Feather--enlarged halftone overprinted with two-stage posterization

Background--enlarged mezzotine overprint on paper stencil background shape.

Print VI--"Feather 4"

Feather--enlarged halftone overprinted with two-stage posterization, stage two double printed.

Background--enlarged mezzotint double printed.

Print VII--"Shell Series Four"

Shell--four-stage posterization and ink draying over paper stencil shape--each color overprinted with varnish.

Background--paper stencil and paper towel.

Print VIII--"Shell Series Five"

Shell-line tone conversion with ink drawing--water soluble blockout--paper stencil.

Background--paper stencil

Print IX--"Shell Series Six"

Shell--four stage posterization with ink drawing printed over paper stencil shape.

Rings--water-soluble blockout

Print X--"Shell Series Seven"

Shell--line tone conversions printed over paper stencil shapes.

Background--enlarged straight-line screen.

Print XI--"Shell Series Eight"

Coral--three-stage posterization printed over paper stencil shape

Background--enlarged graduated value dot pattern.

Print XII--"Feathers-Transition"

Feathers--enlarged halftone, two-stage posterization, ink drawing

Background--paper stencil.

Print XIII--"Feathers"

Feathers--enlarged halftone, line-tone conversion, ink drawing

Print XIV--"Shell Forms"

Shells--line tone conversion, two-stage posterization, paper stencil.

Background--enlarged mezzotint.

Print XV--"Pod"

Seed pod--three-stage posterization and ink drawing, paper stencil.

Background--paper stencils.

Slides of all of the completed prints may be seen in the appendix.

Analysis

The earlier prints produced show a marked preoccupation with technique and manipulation of the materials and are more related to commercial illustration than to printmaking. Figure 10 illustrates this characteristic. It was during this period, however, that technical skills and familiarity with the medium and the materials were developed.

With the introduction of shell forms as images, the prints become more concerned with presenting familiar objects

so that they are perceived simultaneously as familiar and unfamiliar. As the work progressed, more information concerning the nature of the images began to be communicated. The desire to isolate an object and re-state it through the manipulation of photomechanical techniques offered the opportunity to separate the image into parts and reassemble it in terms of color, shape and sometimes position. The familiar objects are presented in a manner which alters the way in which they are perceived while retaining their authenticity. The prints amplify both the nature and the function of the objects they depict. Development of this direction in working with objects occured during the time the project was ongoing and represents a personal growth and expansion.

The use of the camera allowed working directly with the objects and enabled the work to maintain an undercurrent of authenticity important to the statement. In Figure 11 the print reveals the convex and concave surfaces of a shell simultaneously. The simplicity of the line-tone conversion directs attention to the form of the object which defines its nature, a shelter for a soft form and a defense against the environment.

During the initial stage of this project a strong color sensitivity began to emerge. The years spent as a commercial artist had developed a sense of color which had never been allowed a free expression due to the limitations

of print media. The control of color in produced work is difficult to maintain and awareness of this fact motivates a commercial artist to work with color in ways that achieve a desired result in the simplest manner. Subtle shifts in color relationships are frequently lost or distorted in the production of a piece resulting in a sharp awareness of what not to attempt with color. After developing the knowledge necessary to avoid production problems, the unlimited possibilities of control of color in printmaking freed all of the developed sensitivity, allowing color to be a very important communicator in the prints. By placing objects on a field the object/ground relationship supports the role of the image and the importance of the color statement.

The print shown in Figure 13 illustrates the successful integration of technique, object/ground relationship and use of color. The shape of the object is clearly defined against the background texture by juxtapositioning complementary colors. The use of the halftone in the image adds to the object a definite floating quality characteristic of feathers but the appearance of delicacy is denied by the visual weight created by the use of strong, unnatural color defining shapes within the feather. The object hovers lightly over the background, but it is not delicate. This makes a valid statement about the contradictory nature of a feather, a functional component designed to handle great stress while presenting a visual image of fragile softness.

During the period of involvement with the Feather series an important change occured in the work. Initially, the technique was the dominant feature of the prints. "Feather 1" and "Feather 2" show very specific preoccupation with technique in terms of finding a means of establishing some element of iridescence in the feathers and in attempting to work as directly with the feather as possible. With "Feather 3" the preoccupation with technique is replaced by involvement with the object. The manner in which the object is dealt with becomes the primary concern in the prints.

As work on the project progressed it became evident that an avenue for personal growth had been opened and that this avenue was paved with experience gathered during a career as a commercial artist. The career in commercial art is ongoing as is the work in serigraphy with each area adding dimension to the other.

CHAPTER III

SUMMARY AND CONCLUSIONS

Summary

The questions initially posed in this paper were: (a) Can I, a commercial artist, expand and develop as an artist through screenprinting and make valid aesthetic statements unrelated to client and/or product? (b) Can my knowledge of reproduction methods and photomechanical techniques be successfully utilized in screenprinting for non-commercial purposes.

The four prints illustrated and discussed in Chapter II were selected as examples showing direction and stages of development while the work was in progress. Slides contained in the appendix to this paper illustrate all of the prints completed for this project.

Conclusions

The philosophy involved in producing advertising art for a client is different from that involved in producing art in which a subjective personal statement is the intention. In the latter there is no imposed input from an outside source designating product or company image to be projected, size requirement or color limitation. These and other decisions are made by the artist based on practical limitations of

the medium in which he is working. This paper does not attempt to make value judgments concerning the two disciplines but does attempt to point out some differences that influence the way the artist works.

The work habits developed during a period of time as a commercial artist proved limiting during the early stages of this project. The prints were pre-conceived, allowing for little spontaneity during development, and the imagery was illustration oriented. With the introduction of simple objects placed on a background the images cease to be involved with any type of story telling and are offered as visual experiences.

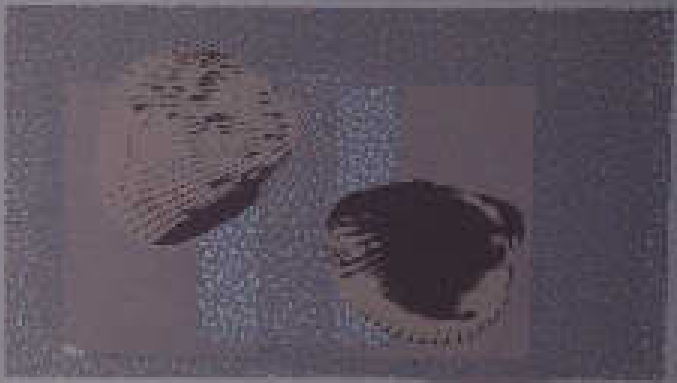
The knowledge of reproduction methods and photomechanical techniques proved an asset in the production of prints for this project. Just as draftsmanship is used to present an object for the viewer's consideration in a drawing, the ability to control and modify what the camera can do is used here to present objects in an interpreted manner. The images presented in the prints discussed in this paper are always authentic, derived from the object placed directly on the copy board of the camera, in some cases placed on the exposure unit and burned directly on the screen. The interpretation of the form in terms of its relationship to the background and its color are subjective decisions.

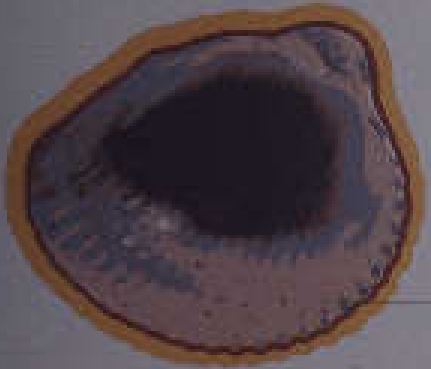
Without the awareness and sensitivity developed through years of exposure in the advertising industry it is doubtful

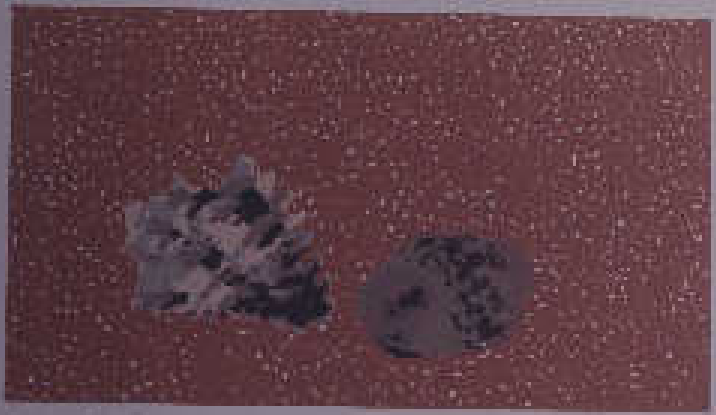
if the new growth and direction evidenced by the prints produced for this project could have been achieved.

APPENDIX

Examples of the body of work produced in connection with this project are contained in the slide binder attached to this paper. Each slide is labeled with the title of the print and its size.







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